

Meeting of the Decommissioning Community Workgroup (#19)
Tuesday, April 20, 2004
Erie County Senior Center, Sandusky

The meeting began at 7 p.m. Present were the following nine Workgroup members: John Blakeman; Chris Gasteier; Betty Irby; Montez McDuffie; Ralph Roshong; Bob Speers; Dave Stein; Stan Taylor and Mary Warren. Present from NASA were: Tim Polich, Decommissioning Project Manager; Sally Harrington, Public Affairs Specialist and Peter Kolb, Decommissioning Environmental Manager. Also present were: Sheryl Leeper and Steve Neilsen of the U.S. Army Corps of Engineers; Dan Burns and Brian Clayman from the Envirocare licensed disposal facility; Susan Santos and Michael Morgan of FOCUS GROUP and five members of the public.

NASA Decommissioning Project Manager Tim Polich began the meeting with a welcome to attendees and introductions of the participants. Susan Santos of FOCUS GROUP then reviewed the minutes from the January 27 meeting (which the members subsequently accepted) and the agenda for the April 20 meeting. She noted that several Workgroup members had expressed an interest in presentations on waste disposal facilities and that, as a result, Dan Burns would provide a presentation about Envirocare.

Project Update

Tim gave a Project Update and began by noting that NASA was planning to send a shipment of low-level radioactive waste to the Barnwell licensed disposal facility on April 21, consisting of one truck bearing a cask containing a steel liner filled with segmented reactor internal components. He added that NASA was also ready to fill another liner with segmented reactor internals, but that no date had yet been set for shipping this material. Workgroup member John Blakeman asked if the internals were made of metal and Tim said they were, adding that one piece – the reactor core box, to which a connected beryllium plate had been removed intact – was actually made of “lock alloy,” an alloy consisting of beryllium and aluminum. Tim showed “before” and “after” slides of recent segmentation activity, including both the reactor core box (where the nuclear fuel had been contained when the reactor was operational) and the lower ends of the control rods (once used to govern the reactor’s power).

Tim reported that Phase 2 of segmentation activities, removing reactor internals from the core region and above, was nearly complete. Work had included removal (in February) of the core box and (in March) removal of the five metering plates, which had once served to divide the reactor tank into above-core and below-core regions and direct water flow throughout the reactor tank. Tim noted that over the next few weeks, there would be some overlap between Phase 2 and Phase 3 (below the core region) segmentation activities. He also said that Phase 4 work would cover the segmentation of the reactor tank itself and expected that NASA would make three more segmentation-related shipments to Barnwell – probably one in June and two in July – noting that the decommissioning waste is subject to “space allotment allocations” at Barnwell, which govern when both disposal space and shipping casks are available.

Tim informed Workgroup members that, in addition to segmentation activities, fixed equipment removal efforts were progressing in the Reactor Building, “at the minus 15 and minus 25 levels” (floors 15 feet below grade and 25 feet below grade), where workers had been removing a secondary cooling system (consisting of a process water unit and air conditioning units), overhead and floor level piping systems, and steel stairways and railings. Tim said work in the Reactor Building levels began in January and involved cutting the pipes, putting them in boxes and

moving the boxes into an area just outside the Reactor Facility fence line, where workers use a front end loader to move the segmented pipes into Sealand containers. John Blakeman asked how “hot” this waste is, with Tim responding, “not hot at all” and reiterating that the cooling system in the Reactor Building was a secondary system – and that the primary water line, which ran to the Primary Pump House (which he would also discuss during his Project Update), was much “hotter.”

The filled containers have been subsequently placed on trucks and taken to the Alaron licensed disposal facility in Pennsylvania, where some of the material is size reduced, then all of the waste is moved to a railhead at Alaron and sent to its ultimate destination, Envirocare, in Utah. Tim added that similar fixed equipment removal is taking place at the Fan House, (where all ventilation equipment had been located) and the Waste Handling Building (where various materials had once been packaged). He reported that, since January 2003, NASA had shipped 1.93 million pounds of low-level radioactive waste (LLRW) to licensed disposal facilities (the vast majority of it to Envirocare), including 600,000 pounds since January of this year.

In addition to segmentation and fixed equipment removal, NASA continues to undertake characterization of radiation in locations throughout the Reactor Facility as well as asbestos removal in the aforementioned buildings. Tim noted that workers doing the asbestos removal wear protective clothing and breathing apparatus. To prevent the asbestos from becoming airborne plastic enclosures are used – including “glove bags” that can fit over piping in smaller areas and “enclosure tents” in larger areas. A similar system is being used to prevent airborne contamination during segmentation work. He pointed out that because some of the pipes had contained a mixture of asbestos and fiberglass, “we treated them as if they were all asbestos,” and removed the material accordingly.

Primary Pump House Decontamination

Tim discussed new project activity taking place in the Primary Pump House (PPH). Located near the Reactor Building, the Primary Pump House was formerly the location of the reactor’s cooling system. Constructed of 9 million pounds of concrete, the PPH consists of five vault-like rooms, three of them containing pumps. The other two contain an ion exchanger and a heat exchanger. When the Reactor Facility was operational, the ion exchanger basically functioned like a water softener. The heat exchanger took heated water from the reactor core and cooled it into cool water to be recycled back to reactor core, a continuing process. The rooms had been accessible only through concrete hatches known as “roof plugs,” which had once contained the reactor coolant. When the Reactor Facility was shut down in 1973, the roof plugs had been covered with foam to keep the building dry and Tim said “The first order of business here was to remove the foam.” Later, workers removed the roof plugs, and then the heat and ion exchangers.

According to Tim, because the PPH rooms contained piping and equipment that had been in close proximity to the reactor, they were considered to have some of the highest levels of contamination. But he noted that initial core boring samples that NASA has taken suggest that the contamination does not run that deep. Workers will begin removing fixed equipment here to prepare for the start of decontamination activity. He explained that NASA is going to take one of the pump rooms, Pump Room #2, and decontaminate the room (removing contamination from all remaining surfaces – mostly concrete) and then conduct a radiological survey of the room – showing that the concrete is largely uncontaminated – while keeping the building intact. The alternative, he said, was to have to remove millions of pounds of concrete as LLRW and send it to Envirocare.

Tim explained that the goal is to be able to demonstrate that the cleanup will achieve what are termed Derived Concentration Guidelines (DCGL) – the necessary cleanup levels that NASA must reach to allow "release" of the building. "If nothing is above the DCGL's (following the results of the Final Status Survey that NASA will conduct)," Tim stated, the NRC would approve the license termination. At that point, he added, "We can use normal demolition techniques," and employ most if not all of the concrete from the PPH and other remaining buildings as clean fill for the seven buildings with basements at the Reactor Facility. John Blakeman asked if NASA could assure the public that "when the buildings are crushed, there is nothing but concrete dust," and Tim said it would be nothing but the dust plus naturally occurring background radiation that is found in rock and concrete. He added that the PPH decontamination work would take place over the next several weeks.

Severe Weather Procedures

In response to a request from Workgroup member Bob Speers, who had noted the onset of the tornado season, Tim addressed NASA's procedures for operating in severe weather. He said that decommissioning workers who were outside the trailers are instructed to go to the minus 15 foot level of the ATS (Advanced Test Services) Building. The ATS Building – which was formerly used to provide office and shop space to support reactor test package preparation in a radiologically clean environment – now provides decommissioning workers with safe shelter in its basement, without their being a radiological area. He also noted that there is an "audible alarm" to warn workers that severe weather is coming, adding that worker training includes recognizing "which noise mean come out of the fence (the Reactor Facility fence line) and which is to go underground." He also noted that NASA conducts drills on weather emergencies and that some decommissioning workers would be taking part in a "Storm Spotter" class being offered by on April 22. John Blakeman asked if the Decommissioning Project had access to radar storm warnings and Tim noted "not specifically the Project," adding that the guards and the Communication Center at the PBS main gate monitor storm coverage "as part of their routine."

Susan Santos of FOCUS GROUP raised another question that Bob Speers had mentioned, about the measures NASA takes to ensure there is no radiation risk to the public during a tornado – and how to keep the site contained. Tim pointed out that in severe weather, "we would not do work that would generate dust" and mentioned that there is enough emergency power to "pick up vital loads when we need to." Bob Speers asked if NASA receives weather advisory information via access to televised weather alerts. Tim reiterated that the PBS Communication Center had that information, and Steve Neilsen of the U.S. Army Corps of Engineers added that the project did have on site weather radio access and therefore "we would not have to wait for the Communication Center to alert us." John Blakeman asked if the Decommissioning team modifies its activities on windy days and Tim responded that NASA would not undertake activities such as operating a mobile crane in high winds.

Envirocare Licensed Disposal Facility

Tim introduced Dan Burns, of Envirocare's Field Services Group. Dan said the company has a contract with Decommissioning Project contractor MWH Constructors to provide several services to the project, including on-site professional support, provision of all containers for Class A waste (the LLRW which has the least amount of radiation), transportation to the Alaron reprocessing facility in Pennsylvania and to Envirocare itself. He said nearly 2 million pounds of decommissioning waste has been shipped to the company to date and showed many slides of the Clive, Utah facility, noting that it is located in the desert (80 miles west of Salt Lake City), is 65

miles away from the nearest neighbor and gets only two inches of rain a year, all conditions especially suited to a LLRW disposal facility. He also said Envirocare is licensed by the NRC and the Utah Department of Radiological Control and also has a permit from Utah Department of Health to accept mixed waste (a combination of radioactive and hazardous waste).

Envirocare currently receives about 16 million cubic feet of waste a year, from what he termed “400 different waste streams” (waste from various types of projects/sources across the country. One customer may have many waste streams), explaining that there are 100 pounds of waste in a cubic foot. Dan noted that a considerable amount of Ohio waste goes to Envirocare. In addition to the Decommissioning Project, the facility accepts waste from three cleanup projects funded by the U.S. Department of Energy. The largest waste stream is from the Fluor Fernald facility, near Cincinnati, a former nuclear weapons plant that sends what he termed 2-3 “unit rails” per month, with Dan explaining that each unit rail consisted of 60 rail cars full of waste. The Fluor Fernald shipments will continue until June 2005. The two other projects are the former Mound weapons facility near Dayton and a facility near Ashtabula. Dan added that nationally, some of Envirocare's biggest projects include reactor facility decommissioning projects: Maine Yankee, – which has sent 500,000 cubic feet (50 million pounds) of LLRW to Envirocare since the start of 2003 – and Yankee Rowe in Massachusetts, which has shipped 4.5 million pounds to date.

Envirocare accepts only Class A low-level wastes, which contain the least amount of radiation (waste with a radiological component). These do not include spent nuclear fuel from active reactors or transuranic wastes, which contain plutonium. Dan pointed out that Envirocare has been granted a license to store Class B and C waste by a state agency (the Utah Department of Radiological Control) but that recent legislation now mandates that a facility wishing to dispose of Class B and C wastes (which contain more radiation) must also seek approval of the governor and state legislature. The state is currently observing a moratorium on new waste licenses while a legislative committee studies the waste issue, with its findings due early in 2005. Dan also noted that low-level waste does not equate with low activity, pointing out that some of the waste Envirocare receives is “as hot as 2 Rem per hour,” (waste known as “mill tailings” from uranium processing facilities), hotter than anything from the Decommissioning Project with the exception of Class B and C wastes that are disposed of at the Barnwell facility. He added that Envirocare also accepts the following kinds of waste: mixed waste; radioactive liquids; PCB/radioactive waste; large components (such as equipment from the Maine Yankee decommissioning) and other hazardous substances (such as asbestos or beryllium).

Disposal Procedures and Facilities at Envirocare

According to Dan, Envirocare (with a square-mile footprint) “looks like a landfill,” albeit one in which the workers wear protective clothing and respirators and contains air monitors at the fence line. He outlined the procedures for burying waste at the facility. First, waste is emptied from its containers and placed on the ground, where workers operating front-end loaders and forklifts mix it with dirt. The waste and soil are shaped into structures known as 12-inch “lifts” before the waste is compacted by running it over with the forklift. He added that all lifts are designed to protect the waste from any water seepage. Dan also noted that because waste material from Plum Brook Station (PBS) does not tend to have dimensions as small as 12 inches, it is placed in CLSM (controlled, load strength material) lifts. These lifts are then placed into cells 28 to 30 feet high and have several layers. They consist of a bottom foundation, topped by a clay liner two feet thick, into which the lifts are placed. Workers then create a large “cover zone” on top of the “waste zone.” First the waste zone is topped with a six feet thick clay liner that includes a “radon barrier” on which foot-thick clay “infiltration barrier” is placed. The clay is covered with a foot of soil and the soil then covered with 18 inches of rock.

Dan said that in addition to the cells for Class A waste, Envirocare also has the following facilities: mixed waste, vitro (waste actually buried in the ground), bulk waste, containerized waste, a treatment facility and a cell for proposed Class B and C waste acceptance.

Many Workgroup members asked Dan questions. Mary Warren asked how long Envirocare operated at this site, with Dan responding, “since the late 1980’s.” Brian Clayman of Envirocare noted that the vitro facility was actually constructed by DOE but that the company owns the square mile of land around the cell. Mary also asked how long it would take Envirocare to reach its disposal capacity but Dan said he did not think that – with a square mile of capacity available – the storage limit would ever be reached. Chris Gasteier asked who would be responsible for cleaning up the site if there were an accident – wondering if there was a surety fund in place – with Brian responding that the company has a letter of credit from the government to cover any necessary cleanup. Chris also asked how many decommissioned reactors were disposed at Envirocare and Dan said several, with “dozens buried intact.” Dan added that Envirocare accepts more waste than any site in the country except for the DOE’s Nevada Test Site but pointed out that at the latter facility, waste is not dumped from its shipping containers, as it is at Envirocare.

Susan Santos of FOCUS GROUP observed that Workgroup members have long heard about employee health and safety in waste removal and packaging on the Decommissioning Project and asked Dan if workers were protected at the facility. Dan stressed that most waste is actually handled by machinery and that workers in proximity wear protective clothing and respirators. Bob Speers asked if this area of Utah had ever been wet, with Dan noting that millions of ago, there had been a lake here. Brian Clayman noted that Envirocare is located about 20 miles from the Bonneville Salt Flats and that the clay in this area is “perfect for encasing waste.”

Waste Profiling and Permitting

Dan discussed the waste profiling process, noting that the customer was responsible for the characterization of waste being sent to Envirocare. He said the company takes the characterization data and shapes it into a waste stream profile (noting material with similar characteristics and properties) with the help of a company Radiation Safety Officer. He added that he spend 40% of his time “talking about how we group (waste material) together.” The company looks at the characterization prepared by the customer – covering the physical, chemical and radiological properties of the material to be shipped (and including a soil analysis), reviews a series of forms and examines a pre-shipment sample such that the customer meets all licensing conditions before the first shipment can take place. The customer must also include information on how the waste was generated, the methodology for determining its radiation concentrations and the mode of packaging and transportation to be used.

After the company’s review and approval, Envirocare sends the customer a Notice to Transport, signifying that the customer has the OK to ship waste to the facility. Dan added that the state of Utah also requires any customer who wants to transport waste to Envirocare to fill out a form and pay a fee to the state in order to receive a Generator Site Access permit. In addition, the customer must send Envirocare an Advance Shipment Notification form at least five business days in advance of making a shipment, in order to request a shipment arrival date. Dan noted that many shipments from decommissioning first make their way to Alaron, where they are transferred to railcars, and that Envirocare conducts a waste verification analysis on the first few shipments it receives, sampling materials at specified frequencies, with more frequent sampling of new waste streams to be sure they meet all waste acceptance criteria.

Shipping to Envirocare

Dan talked about the process of receiving and handling waste shipments by truck and rail. He noted that Envirocare has a bulk waste facility for handling large waste materials – both those packaged in “non-bulk” containers (such as drums and boxes) and those in “bulk” containers (such as the Intermodal containers frequently used on the Decommissioning Project). He said that there are 25-50 trucks arriving daily at Envirocare and that there are “a couple of hundred” rail cars – containing 100 tons of waste per car – waiting to be unloaded. At the Bulk Waste Facility, the waste from the train shipments, especially from the Fluor Fernald facility, is dumped on the ground via the use of heavy machinery known as a “car turner” and then covered. Dan noted that the Bulk Waste Facility also accepts large components, especially those from decommissioned reactors. He said the largest piece that had been accepted weighed 280 tons – a steam generator which they filled with grout.

John Blakeman asked if the waste containers that leave PBS are sealed and Dan said they were. He noted that the company’s contract calls for all waste to be shipped in “strong, tight containers” that prevent dust, light or air from entering the packaged material. He said it is the shipper’s responsibility to inspect the shipment, ensure the containers are appropriate and to put the proper placarding on the trucks. He remarked that Envirocare uses an experienced transportation subcontractor, MHL, to provide the containers. Susan Santos asked about the safety of the Plum Brook shipments in terms of any possible terrorist threats. Dan said the U.S. Department of Transportation has safety regulations for waste shipments and that project contractor MWH Constructors has “audited our provider program” to ensure that Envirocare is providing adequate protection. He pointed out that some of the details are kept secret for security purposes. Workgroup member Dave Stein commented that the waste “is so low-level” it would not cause harm to the public even if “someone stole your waste, chopped it up and threw it around” in a “dirty bomb.” Dan said there would be a serious cleanup cost involved but agreed that there would be no effect on the public’s health.

A member of the public, Joni DuFresne, asked what would happen in the event of a waste truck accident, and Dan responded that Envirocare has a required a \$10 million insurance policy and that the requirement “is passed on to our transportation subcontractor.”

Community Relations Update

Sally Harrington reported that the April edition of the project’s quarterly newsletter had recently been published (and sent to more than 2,100 recipients) and Workgroup members said they had received their copies. She also noted that work had begun on new material (display boards and fact sheets) for the next Community Information Session, which will be held in October. Susan added that one fact sheet would be published in July, the other in October.

Sally said the documentary video on the Reactor Facility was complete and that there would be a premiere on Wednesday, July 14 (7 p.m.) at the State Theatre in Sandusky. [As a result, the Workgroup meeting scheduled for July 20 had been rescheduled for July 13, at the Huron Public Library.] She said NASA planned to invite the Workgroup and organizations with which NASA has interacted (groups that have hosted decommissioning speaking engagements and/or Workgroup meetings) as well as the general public. She asked Workgroup members to suggest groups that may be interested in seeing the video premiere, adding that copies would eventually be distributed to a number of local schools, libraries and groups. Sally noted that it was hard to reach the schools to promote the premiere since it takes place during the summer time but Tim

added that NASA would send copies to the group once school was back in session. Sally also said the pictorial history “coffee table” book on the Reactor Facility was nearing completion and would be distributed to local schools, libraries and groups this summer.

General Discussion and Topics for the Next Meeting

Tim noted that Workgroup member Rick Graham, who was unable to attend tonight's meeting, had inquired as to whether testing equipment at PBS, near Patten Tract Road, was being used to monitor groundwater as related to decommissioning. Tim said the equipment was not connected to decommissioning and John Blakeman, who is also a member of the Restoration Advisory Board for the cleanup of the former Ordnance Facility at PBS (a USACE project), said the equipment was for monitoring the Ordnance Facility cleanup

Workgroup member Ralph Roshong pointed out that he had asked for budget and cost information on the Decommissioning Project. Tim said that NASA would complete the project for under \$160 million. Ralph said he had heard a higher figure – \$250 million – at the start of decommissioning but Tim stated that \$160 million was the only figure he has ever discussed. Tim promised a budget/cost presentation at the July meeting. Ralph requested that the data include what has been expended to date and Tim agreed, adding that \$30 to \$40 million was earmarked for this year. John Blakeman asked if he could, with confidence, tell his wife or other members of the public that the money is in hand to finish the project. Tim said there had been an initial \$8 million for environmental funding and \$152 million from a separate appropriation to fund the rest of the project. He added that there was a “continuing resolution” in effect every year but was confident that there would be adequate funding to finish the project in 2007, noting that “We went from \$16 million to \$64 million a year and a half ago and that was our critical year.”

Sheryl Leeper, interim resident manager for the USACE, suggested that NASA do a presentation on decontamination methods at the next meeting. Tim noted that he had talked briefly about scabbling in tonight's presentation, but he and Susan agreed that there should be more information on the topic provided at the July meeting.

The meeting adjourned at 9 p.m.